AMENDMENTS TO THE DRAWINGS

The attached sheet(s) of drawings includes changes to Figure 1, where Applications have added the label "Prior Art".

Attachment: An Appendix including amended drawing figures is attached following page 20 of this paper.

REMARKS

Claims 1-62, and 70 are pending to the present application. By virtue of this response, claims 4-5, 18-19, 38, 50-51, and 62-69 have been cancelled, claims 1-2, 6-10, 14-15, 17, 20-33, 37, 39-40, 47, 49, 56-57, and 70 have been amended. Accordingly, claims 1-3, 6-17, 20-37, 39-49, 52-61, and 70 are currently under consideration. Amendment and cancellation of certain claims are not to be construed as dedication to the public of any of the subject matter previously presented.

Election/Restrictions

Applications elect invention I, claims 1-62 and 70 to be considered for the pending application. Claims 63-69 have been withdrawn.

Oath/Declaration

Applications submit herein a supplemental Application Data Sheet, revising the post office address of inventor Jun Kong.

Claim Objections

Applications have amended the claims identified by the Examiner to address all the informalities.

Claim Rejection under 35 U.S.C. § 102

Claims 1-4, 8-12, 18-20, 22-23, 34-35, 39-42, 46, 48-50, 52-53, 62 and 70 stand rejected under 35 U.S.C. 102(e) as allegedly being anticipated by McGaughy et al. (U.S. Patent No. 7,024,652, herein after the McGaughy reference).

In response, Applicants respectfully submit that the McGaughy reference does not disclose each and every element of the independent claims 1, 8, 39, and 70 of the pending patent application as amended. The Office Action cites Figure 8A, and columns 8, 12-13 of the McGaughy reference allegedly disclose the elements of these independent claims. Applicants respectfully disagree. Upon a close review of the information cited, Applicants find that Figure 8A

describes methods of 1) static (isomorphic) partitioning and RC reduction of a static database (SDB) prior to simulation; and 2) adaptive and isomorphic partitioning of a dynamic database (DDB) during simulation. Figure 5A of the McGaughy reference describes a process of static partitioning, which does not involve eliminating/remove circuit elements as claimed in the present application. Although the process of RC reduction is performed prior to simulation, as the Office Action correctly cited column 13, lines 12-43 may be used to reduce circuit elements. The McGaughy reference merely describes the results that may be achieved by an RC reduction process in general (fewer states and elements that may be represented with smaller matrices), without describing the detail processes in reducing circuit elements.

Regarding the process of adaptive and isomorphic partitioning of a dynamic database (DDB) during simulation, Figures 9C and 11 of the McGaughy reference describe how the matrix representation of leaf circuits may be merged/split (see Figure 9C) according to the isomorphic properties of the circuits or grouped/regrouped (see Figure 11) according to the degree of coupling between the circuits. In both cases, the topology of the design being simulated remain the same, as the SDB is used by built the DBB (see Figure 8A) and the branch circuits in the DBB include references to the SDB to fetch the topology and physical characteristic information during the simulation (see Figure 8B). The topology of the circuit being simulated is not modified during the simulation, because it would make no sense to simulate a "moving target".

Therefore, Applicants respectfully submit that the McGaughy reference does not disclose at least the element of "generating a second topology reflecting a reduction of one or more identified elements" as claimed in the independent claims 1, 8, 39, and 70. It follows that their corresponding dependent claims 2-3, 6-7, 9-17, 20-37, 40-49, and 52-61 are also in condition for allowance for at least the reason that they depend from an allowable independent claim.

Claims 1-4, 8-9, 12, 15-16, 20-21, 24-29, 37, 39, 46-47, 50-51, 54-59 and 70 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Sheehan ("TICER: Realizable Reduction of Extracted RC Circuit", 1999 IEEE/ACM International Conference on Computer-Aided Design, November 7-11, 1999, pp.200-203, hereinafter the Sheehan reference).

In response, Applicants respectfully submit that the Sheehan reference fails to disclose each and every element of the independent claims 1, 8, 39, and 70 of the pending patent application as amended. The Office Action cites column 2 of page 200 and last paragraph of page 201 of the Sheehan reference allegedly disclose the elements of these independent claims. Applicants respectfully disagree. Upon a close review of the information cited, Applicants notice that the Office Action has mistakenly treated nodes as circuit elements (see page 10, line 2). In addition, Applicants have distinguished the Sheehan reference in the background section of the pending application. Specifically, Applicants have pointed out that "[A] drawback of the TICER algorithm is that it ...ignores the topological impact of node elimination." "Eliminating node N according to TICER produces six new conductance connected between the four neighboring nodes. In general, eliminating a quick (or slow) node having M neighboring nodes could produce M(M-1)/2 new resistors or capacitors between the neighboring nodes. These new resistors or capacitors could further aggravate the subsequent circuit analysis." (see paragraph [006] on pages 2-3 of the pending application, emphasis added.) In other words, the Sheehan reference teaches a method of reducing the number of nodes of a circuit at the expense of increasing the number of circuit elements (resistors and capacitors), which is contrary to the claimed limitations of the pending application.

Therefore, Applicants respectfully submit that the Sheehan reference does not disclose at least the element of "generating a second topology reflecting a reduction of one or more identified elements" as claimed in the independent claims 1, 8, 39, and 70. It follows that their corresponding dependent claims 2-3, 6-7, 9-17, 20-37, 40-49, and 52-61 are also in condition for allowance for at least the reason that they depend from an allowable independent claim.

Claims 1-4, 8-12, 20, 32-34, 38-42, 46, 50 and 70 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Pong et al. ("A Parasitics Extraction and Network Reduction Algorithm for Analog VLSI", IEEE Transactions on Computer-Aided Design, Vol. 10, No. 2, February 1991, pp. 145-149, hereinafter the Pong reference).

In response, Applicants respectfully submit that the Pong reference does not disclose each and every element of the independent claims 1, 8, 39, and 70 of the pending patent application

as amended. The Office Action cites Section IV on page 148 and last paragraph of page 147 of the Pong reference allegedly disclose the elements of these independent claims. Applicants respectfully disagree. Upon a close review of the information cited, Applicants find that the Pong reference teaches a technique of using transmission line theories for parasitic extraction algorithm for Manhattan designs. In one aspect, the teachings of the Pong reference are similar to that of the Sheehan reference. For example, in Figure 5 of the Pong reference, the algorithm reduces the number of nodes of a star circuit at the expense of increasing the number of circuit elements from 5 to 10. In Figure 6 of the Pong reference, a 5-element circuit is "simplified" to form a 10-element circuit.

Therefore, Applicants respectfully submit that the Pong reference does not disclose at least the elements of "generating a second topology reflecting a reduction of one or more identified elements" as claimed in the independent claims 1, 8, 39, and 70. It follows that their corresponding dependent claims 2-3, 6-7, 9-17, 20-37, 40-49, and 52-61 are also in condition for allowance for at least the reason that they depend from an allowable independent claim.

Claim Rejection under 35 U.S.C. § 103(a)

Claims 5-7, 13-14, 17, 43-45 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Pong et al. ("A Parasitics Extraction and Network Reduction Algorithm for Analog VLSI", IEEE Transactions on Computer-Aided Design, Vol. 10, No. 2, February 1991, pp. 145-149) in view of Teig et al. (U.S. Patent Application Publication No. 2006/0010412).

In response, for at least the reasons presented above, claims 5-7, 13-14, 17, 43-45 are allowable because they depend on an allowable independent claim. Thus, combination of the Pong and Teig references does not anticipate these claims of the pending application.

In addition, Applicants respectfully submit that there is no motivation to combine the Pong and Teig references. In fact, the Pong reference teaches away from the present application because the number of circuit elements increases as a result of applying the algorithm taught by the Pong reference. (see Figures 5 and 6 of the Pong reference.)

Claims 15-16 and 47 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Pong et al. ("A Parasitics Extraction and Network Reduction Algorithm for Analog VLSI", IEEE Transactions on Computer-Aided Design, Vol. 10, No. 2, February 1991, pp. 145-149) in view of Aji et al. (U.S. Patent Application Publication No. 2004/0044979). Claims 18-19, 35-36, 48-49 and 62 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Pong et al. ("A Parasitics Extraction and Network Reduction Algorithm for Analog VLSI", IEEE Transactions on Computer-Aided Design, Vol. 10, No. 2, February 1991, pp. 145-149) in view of Mudda et al. (U.S. Patent No. 6,353,917).

In response, for at least the reasons presented above, claims 15-16, 18-19, 35-36, 47-49 and 62 are in condition for allowance because they depend from an allowable independent claim and because the Pong reference teaches away from the claims of the pending application.

Support for Amended Claims

The support for amendments made in claim 1 is found at least in Figure 3 and its associated descriptions. The support for amendments made in claim 8 is found at least in Figure 6 and its associated descriptions. The support for amendments made in claim 39 is found at least in Figure 8 and its associated descriptions. The support for amendments made in claim 70 is found at least in Figure 9 and its associated descriptions.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. 188122002200. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: November 21, 2006

Respectfully submitted,

By _____

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Attachments